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<Special Feature "New Waves in Islamic Economics: Renovation of the Traditional Economic Institutions (Waqf and Zakat) and Reconsidering Early Generations">Evaluating the Impact of Productive Based Zakat in The Perspective of Human Development Index: A Comparative Analysis

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Evaluating the Impact of Productive Based Zakat in The Perspective of Human Development Index: A Comparative Analysis

Mohammad Soleh Nurzaman*

I. Introduction

Poverty is still one of the major problems of economic development in Indonesia. Out of a population of 252 million, more than 28 million Indonesians are currently living below the poverty line and approximately half of all households remain clustered around the national poverty line set at 292,951 rupiahs per month or equal to USD 24.4 (WorldBank, 2015). Furthermore the gini coefficient has increased from 0.36 in 2005 to about 0.42 in 2015. This means that the income gap between the have and the poor is widen.

Efforts to overcome the problem of poverty in Indonesia are not only on how to accelerate the reduction in the number of the poor, but more importantly how to improve the welfare of the poor. While social security systems have been well established in many developed countries to reduce poverty and increase the welfare of the poor, in developing countries such comprehensive social security systems are still lacking. In many Muslim countries, however, there exist the institutions of zakat as part of the socio-economic framework that could play a role in minimizing poverty.

Zakat is indeed potentially could overcome the problem of poverty. As one of the five pillars of Islam, zakat contains the principle of social justice and wealth redistribution for the recipients.¹ The recipients of zakat or *mustahiq* is already determined to eight classes (*asnaf*) alone, namely: *fugara* (needy), *masakin* (poor), *amilin alaiha* (the zakat's manager), *muallafat al-qulub* (the person being tamed his heart), *fi al-riqab* (freed slaves), *gharimin* (people who owe), *Fi sabilillah* (fighting in Allah's way), and *ibn al-sabil* (people who were on the way). Thus, the impact of zakat on human welfare increasing is something that theoretically significant and built-in in the Islamic system since the needy and the poor is the first two groups from eight groups within recipient list zakat.

The specific system of zakat in Indonesia, which is based on Zakat Act No. 29/2011,² can further play a key role in achieving the potential impact of zakat to poor people. The Indonesian government has began to accommodate the implementation of Zakat Act by establishing *Badan Amil Zakat Nasional* (BAZNAS), or National Board of Zakat, as an authority that manages the zakat collection and distribution in Indonesia. This new Act

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1 Islam is built upon five pillars — testimony of belief in one God and Muhammad as His prophet, prayers, zakat, fasting in the month of Ramadan and the pilgrimage to Mecca.

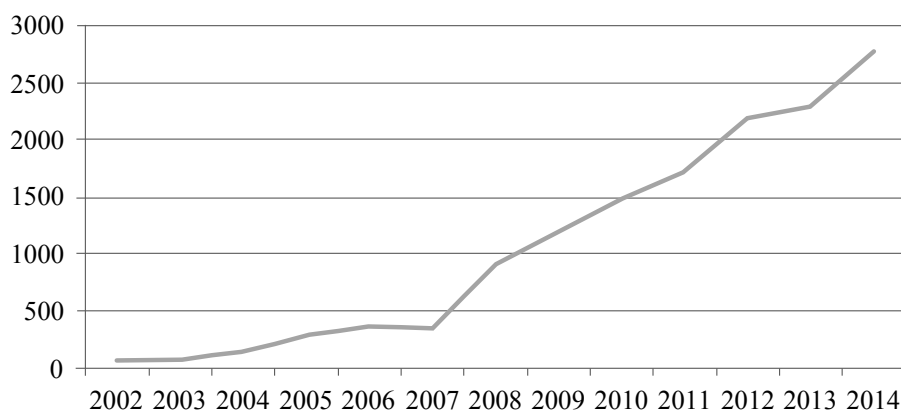
2 The Zakat Act no 29/2011 has ammended the Zakat Act No. 38/1999.

mandates a stronger integration of zakat management in the country. According to the Act, zakat institutions are divided into two categories: (i) government board of zakat, that is BAZNAS; and (ii) private zakat institutions or abbreviated as LAZ (Lembaga Amil Zakat). BAZNAS is given a mandate to lead the integration process and to coordinate all other zakat institutions comprising BAZNAS at the Provincial and City/Regency levels and LAZ.

The Zakat Act also explains the uses of zakat fund in Indonesia that can be utilised not only for consumptive but also for productive activities. Consumptive activities aim to resolve problems that are related to daily needs and immediately used or consumed, while productive activities are intended for productive enterprises. By receiving productive zakat, the recipients are required to have microenterprise and use the fund to expand their business, or at least to start a business instead of spending it for daily consumption. Consequently, productive zakat is expected to give greater impact to the poverty than the consumptive zakat as the effect of zakat will be felt in the long term, even though the zakat provided has been used.

Nationally, the collection of zakat funds in Indonesia has significantly increased during the last decade. BAZNAS (2013) recorded that national zakat collection in 2012 reached Rp2.2 trillion (USD 207 million). The data combine total collected zakat from both the government board of zakat and private zakat institutions. This figure depicts a 27.24% increase compared to the previous year, or 31 times greater compared to 2002. Though there is a big gap between the realization and the potential of zakat,³ the data indicate substantial increases in zakat collection within a decade, which is 48% per year. Figure 1 depicts the data of for the collection of zakat in Indonesia.

Figure 1
Collection of Zakat Fund
(IDR - Billion)



Source : Badan Amil Zakat Nasional (2013), PEBS-FEUI (2010)

³ Firdaus, M. et.al (2012) predict the potential of zakat in Indonesia reached Rp217 Trillion (USD 19.7 million) in 2012.

With all these characteristics, zakat is now one of the important instruments to improve the welfare of the poor in Indonesia. It has now been transformed from the charity purpose only into the economic empowerment (PEBS-FEUI, 2009: 12). Furthermore, with the distribution characteristics mentioned above, zakat becomes a very effective instrument to reduce poverty level, as it is inherently pro-poor and self-targeted. However, the claim of zakat's effectiveness on welfare needs to be evaluated.

This study, therefore, aims to evaluate the importance of zakat for poverty alleviation purposes. Specifically, this study attempts to examine the productive-based zakat, conducted by zakat institution to the welfare of zakat's recipient (*mustahiq*) in the perspective of human development measured based on the Human Development Index.

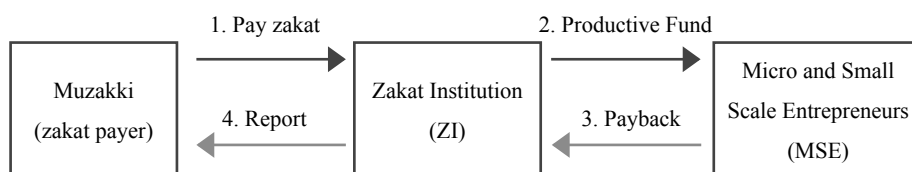
Human development can be simply defined as a process of enlarging choices. In principle, human choices and their outcomes can be infinite and change over time. However, the three essential ones at all levels of development are for people to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living. The Human Development Index reflects these three elements.

Indicators of achievement of human development index (HDI) and all of its component will be expected to provide better success parameters of the zakat productive scheme that organized by zakat institutions. Furthermore, this study collects and analyzes the data for two consecutive years for a majority of the *mustahiqs*. These goals are broken down as follows:

- a) To estimate Human Development Index at the household level of productive-based zakat's recipients, for two periods
- b) To compare the household level HDI obtained by *mustahiqs* at first and second period of observation, and between *mustahiq* and non zakat recipient.

Figure 2

The productive-based zakat mechanism



The figure above explains the practice of productive-based zakat distribution program that is conducted by zakat institution. After *muzakki* pays zakat fund to the zakat Institution (line 1), this institution is then allocating it for the recipients who use the funds for the micro and small scale business (line 2). The recipient then pays back the productive-based zakat on

monthly basis (line3), and finally the zakat institution submits a report to the *muzakki* (line 4). However for most cases the payment from the *mustahiqs* is treated as saving, which can be withdrawn when it is fully paid.

II. The Important of Zakat for Improvement of Welfare

Al-Qur'an mentions the needy and the poor as the first two groups from eight groups within recipient list zakat (*mustahiq*). They are given priority by al-Qur'an to receive zakat. This shows that addressing the problem of welfare is the main aim of zakat (Qardhawi, 1997). Moreover, the sayings and the practice of the prophet Mohammad (SAW) and the opinion of fuqaha's place a lot of emphasis on the poor and needy in the disbursement of zakat to the extent that it is overwhelmingly believed that giving to the poor and needy is first priority (Kahf, 2006). Furthermore, with the distribution characteristics mentioned above, zakat becomes a very effective instrument to reduce poverty level, as it is inherently pro-poor and self-targeted. The priority channeling zakat fund to the poor people has been run by almost all zakat institutions in Indonesia through various programs in order to improve the welfare of *ummah* (PEBS-FEUI, 2010: 76).

Dogarawa (2007) says that Islam is dedicated to universal brotherhood, social and economic justice. This shows that the teachings of Islam would be meaningless if it is not accompanied by economic justice that frees people from the exploitation of one individual against another. Consequently, everyone will get his due for his contribution to society or to the social products. To be fully aware of the meaning of social justice, then all potential resources should be utilized efficiently and fairly to meet the needs of all and to bring about equitable distribution of income and wealth.

Chapra (1979) explains that Islam, through zakat, emphasizes distributive justice and combines them in an effort to encourage brotherhood among Muslims so as to develop a system that can create a productive program, and then provide assistance in finding gainful employment for the unemployed according to their ability. It thus enforces a system of "just remuneration for those who work. Furthermore, it also makes compulsory arrangements for insurance against unemployment, occupational hazards, old-age pensions and survivors' benefits for those who can afford to provide these things.

According to a hadith, a man went to the Prophet (peace and blessings of Allah be upon him) saying: "I have a *dinar*", the Prophet said: "Spend it on yourself". He said: "I have another". He told him: "Spend it on your children". He said: "I have other (a third one)". He replied: "Spend it on your family". He said: "I have other (a fourth one)". He said: "Spend it on your servant". He said: "I have other (a fifth one)". The Prophet said: "You know better what to do with it" (Abu Dawud and Nasa'i).

The above hadith shows a very positive thing in which every member of the family is

expected to offer a helping hand to other family members who are less fortunate economically through mandatory maintenance (if any), *sadaqah*, and zakat payments. This is inline with the economic objectives of the zakat, which are to eliminate poverty and to prevent the accumulation of excessive wealth. It is expected that zakat is able to drive the behavior of a person to be more socially oriented

Chapra (2000) says that zakat is a religious instrument that assists individuals in society to help the needy and poor people that are not able to help themselves. Although this instrument is very potential to encourage poverty reduction, it does not eliminate the obligation of governments to create prosperity. Zakat is also not replacing the components of government expenditure for welfare and the government budget for disaster management. The zakat charity, however, is expected to partly fulfill the necessities of life that can be shifted to the more capable community, especially to close relatives and neighbors of the individuals associated.

There are several other reasons why zakat becomes an effective tool. First, the use or allocation of zakat has been determined exactly in the Islamic Shari'a (Quran, 9: 60) where the zakat is only given for eight classes (*asnaf*) alone, namely: *fuqara* (the indigent), *masakin* (the poor), *amilin alaiha* (the zakat manager), *muallafat al-qulub* (the person being tamed at his heart), *fi al-riqab* (freed slaves), *gharimin* (people who owe), *Fi sabilillah* (fighters in Allah's way), and *ibn al-sabil* (travelers). Muslim scholars agree that other than the eight groups is not lawful to receive zakat.

Secondly, zakat is levied on a broad base and include a variety of economic activities. Zakat is levied on agricultural products, pets, gold and silver deposits, commercial activities, commercial and mining goods taken from the earth. In contemporary *fiqh*, zakat is even also taken of all revenues generated from the physical and financial assets and expertise of workers. Thus, zakat is a very big potential source. This becomes an important basis for capital funding programs to eliminate poverty.

Third, zakat is a spiritual tax paid by every Muslim under any circumstances. Therefore, the acceptance of zakat fund is relatively stable. This will ensure the sustainability of poverty alleviation programs, which typically require a relatively long period of time. Because it bears the characteristics, the presence of zakat in the socio-economic framework of Islam can be a strong basis for sustainable poverty alleviation programs. As an instrument of human development, zakat could be superior compared to fiscal instruments that currently exist.

Furthermore, with the general phenomenon of contemporary poverty classified as structural poverty, the tendency of utilization of zakat funds are now increasingly focused on development and empowerment programs. Utilization of traditional zakat programs that are exclusively charitable and consumptive oriented is no longer sufficient to liberate humankind from the downturn. By joining the development and empowerment programs, the poor people

will have both physical and financial capitals that enable them to grab opportunities to be wealthier. It is expected that these people will have the ability to help themselves, regardless of dependency on social structure, political economy that is not aligned to them.

This opinion is held by Qardhawi (2007) who argues that Islam requires the work of capable people irrespective their social status, but lets the poor be given access and or facilities to do a job so that he/she can be independent. Furthermore, he argues that the utilization of zakat funds for income generating activities, such as setting up small and cottage industries, providing necessary training, and other empowerment program for poor communities, will improve their welfare and reduce the poverty rate.

Since long time ago, Indonesian Ulema Council (MUI) has also issued fatwa that zakat funds allow the indigent and the poor to be productive, while parts due to the *Fi sabilillah* can be distributed for the *maslahah 'ammah* (public interest).⁴ OIC Fiqh Academy (1998) even allows the use of surplus funds of zakat for income generating investments of which fund will eventually be owned by those who are entitled to the zakat, to the extent that it is done after the basic and urgent needs of *mustahiq* have been fulfilled and with sufficient guarantees against losses.

III. Research Method

3.1 Data and Sampling

Two sources of data are used in this study. The first source is primary data, which are obtained through questionnaire survey. The questionnaire survey is distributed to the beneficiaries of productive-based zakat and non-zakat that have received funding from zakat institutions in Jakarta, Indonesia. Jakarta is chosen to be a research area mainly because the best prototype of zakat program in Indonesia is currently in the capital city. The second source is secondary data, particularly from the World Health Organization and Badan Pusat Statistik (Indonesia Statistical Office).

The study population is defined as a group of people who have received productive financing from zakat institution in Jakarta, Indonesia. Based on the data from Zakat Organization Forum (FOZ), currently there are 10 zakat institutions operating in Jakarta that are considered having good productive-based zakat scheme.⁵ Meanwhile, the sample is defined as the number of the productive-based zakat recipients and their families who have been chosen to represent the entire population. Since in estimating HDI at household level there is a need to have data of the entire household members, the survey is extended to the all family members of productive-based zakat recipients.⁶

4 See fatwa MUI about zakat fund for productive activities and public interest on 8 Rabi'ul-Akhir 1402 AH/ 2 February 1982.

5 PEBS-FEUI 2010.

6 All the family members are either asked directly if they are at home when the interviewer comes or asked indirectly through the head of family. The information can be asked indirectly since the data needed are

This study uses cluster sampling method to generate samples. Cluster sampling has been used in various studies that measure the impact of the financial institutions, mainly to microfinance-based institutions, in improving the welfare of the poor, for instance by Chowdhury, Gosh and Wright (2005) and Amin, Rai, and Topa (2003). This study, specifically, uses a two-stage sampling methods in conducting the survey. First, choose the zakat institutions that become the object of this research. Second, do a simple random sampling of clusters from the chosen zakat institutions to produce the survey respondents.

There are 3 zakat institutions out of 10 that are selected at the first stage, which comprises about 15 clusters productive-based zakat recipients. These clusters are categorized based on group of recipients or locations that have been arranged by the zakat institutions and each cluster consists of 15 to 25 zakat recipients. Then 8 clusters are chosen at the second stage, which totally consists of 133 recipients or 615 family members.

As mentioned in the objective of study that the obtained HDI at initial year will be compared with the HDI at the following year, these 133 recipients are asked again with the same questionnaire to see the comparison between the first and the second period.

Likewise, there are also 60 households or 243 family members that are considered control group since they receive non-zakat productive fund from zakat institutions.⁷ The source of fund is not from zakat but other sources of fund that aim to get profit through other scheme such as *murabaha*.⁸ The result of estimated HDI from this control group is used to compare with those of productive — based zakat scheme.

3.2 Estimation Techniques

There are two quantitative techniques used to answer the objective of study: method to estimate the value of Human Development Index at household level and technique to compare the HDI that is obtained. The household level HDI obtained by mustahiqs will be compared between the first and second period of observation, and will also be compared to those obtained by non-zakat recipients.

The method to estimate household HDI at this paper is following Nurzaman (2011) through two important improvements.⁹ The first improvement is by including aggregated health indicator as the independent variable in the imputation method of life expectancy index. This health indicator comprises two main elements — the ability of people to have a proper general information that supposed to be well known by the head of family.

7 According to Zakat Act No 23/2011, zakat institutions in Indonesia are allowed to receive non-zakat payment such as *infaq* and *sodaqoh*.

8 *Murabaha* is often referred to as “cost-plus financing” and frequently appears as form of trade finance based upon letters of credit. For discussion, see for example Irfan, Qazi, *Murabaha Financing vs. Lending on Interest* (2008).

9 The method of estimating household HDI is explained in my previous paper, which has been presented at 8th ICIEF. It can be accessed at <<http://conference.qfis.edu.qa/app/media/237>>

house and to have access to health facilities. A proper house is indicated by the components of electricity, toilet, tiles, roof, wall, and water, while access to health facilities is represented by having access to doctor, having access to health providers, and having ability to get medicine. These indicators are chosen following the standard questions formulated by the Indonesia Statistical Office in the National Socio-Economic Survey (SUSENAS).

Another improvement is extending the education index. An additional indicator is used in forming this index and the other two indicators remain utilized through some modifications. Informal education or community-based education¹⁰ is used as additional indicators for those who do not have formal education, while the average length of school will be replaced by schooling attainment for household members who are above 6 years¹¹ and literacy is directly asked to the all respondents.

In the process of computation, there are two different calculation methods. First, the three indicators are combined after each is given weight of one-third equally for the person who has not completed the education up until minimum level required by the government,¹² but he/she might join informal education. For the person at the school age or a university graduate, the weighting scheme follows the government standard estimation, i.e. two third for literacy and one third for schooling attainment.

Simply, the disaggregated HDI for household of *mustahiq* is obtained from the composite index, calculated as the simple average of three components, as follows:

- (1) Life Expectancy Index as measured by life expectancy at age for every member of household.
- (2) Education Index as measured by literacy rate, length of school, and participation in informal school for every member of household.
- (3) Standard of Living Index, or Income Index, as measured by the total expenditure for daily needs consumption of each family adjusted for purchasing power.

$$HDI = \frac{1}{3} (Life\ expectancy\ index) + \frac{1}{3} (Education\ index) + \frac{1}{3} (Income\ Index)$$

Meanwhile, Comparative analysis of *mustahiqs'* HDI are conducted to determine whether productive-based zakat has been able to improve *mustahiqs'* and their families

10 In the Acton National Education System, No. 20/2003 Article 1, paragraph 16. It is stated that the sense of community-based education is to provide education based on the distinctiveness of religious, social, culture, aspirations, and educational potential of the community as a manifestation of, by, and for the community. Thus it appears that community-based education is basically an education that gives independence and freedom in the community to determine the field of education in accordance with the wishes of the community itself.

11 In Indonesia, a person starts going to formal study at age 7.

12 Pursuant to Indonesian Government Regulation No.47/2008, the compulsory education is 12 years or the school age is from 7 to 18 years old.

welfare and to ascertain whether the *mustahiqs*' welfare are better than that of non-productive-based zakat recipients. Paired t-test and independent t-test are used for the analysis. Paired t-test is used to compare the estimated *mustahiq* HDI between two periods, while independent t-test is used to compare the estimated HDI of *mustahiq* and the estimated HDI of non-zakat recipients.

T-test is statistical methods that widely used to compare group means, which in this case is the means of HDI. The variables of interest are the estimated HDI. As explained at the previous part, the samples in this research are taken independently for two periods by using multistage cluster random sampling. Hence they fit the criteria of using the t-test method.

The size of productive-based zakat, which is used for microenterprise financing, is considered a very significant factor that may change the recipient's life because a higher size of financing may create greater improvements in the business of the recipients, thereby providing a positive impact to the indicator of human development index. The size of zakat financing becomes the main indicator as this research evaluates the impact of zakat to the human development of *mustahiqs* and their families. Previous literature such as Zaman (2001) addresses how borrowing from microfinance institution is giving a positive impact to the recipients. In his opinion, the impact of financing on income-poverty level of the poor is a function of borrowing beyond a certain condition on how poor the household is to start with and a certain credit threshold.

The number of dependents may also have significant influence to micro entrepreneurs' welfare.¹³ As they have more dependents, they have more responsibility so they are supposed to work harder and earn more income. However, the welfare status of recipients with more dependents may be worse especially if the status is measured based on real expenditure, as part of HDI, which is utilized by this study. The number of dependents may reduce the welfare status of a client if there is no improvement in real expenditure when a new child or new family member comes to the family.

As a tool to eradicate poverty, since the late 1960s, the Indonesian government has encouraged the citizen to implement family planning by limiting the number of children to 2 for each family. This study then uses this benchmark to evaluate distribution of zakat recipients based on number of dependents. Thus, respondents are divided into two groups: one with 4 and less than 4 family members and those with more than 4 family members.

The next variable is empowerment programs that are joined by *mustahiq* and his/her family. Empowerment is the expansion of assets and capabilities of the poor to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives (Narayan 2002: xviii). Since poverty is multidimensional, the poor need a range of sets and capabilities both at the individual level (such as health, education, and housing) and at the

13 The paper work on this issue for example is that of Amin, Rai, and Topa (2003).

collective level (such as the ability to organize and mobilize to take collective action to solve their problems).

These programs are principally the complement to zakat financing given by zakat institutions, which have objective to provide additional knowledge and skill to the *mustahiq* as well as their families. By joining these programs, the recipient of zakat is expected to have skill on how to manage the business. The recipient of zakat is also expected to have more knowledge about the important of getting their education and their health better, other than just having higher income. Therefore the household of the recipient is expected to have better welfare than those who are not.

Other variables that can differentiate between poor and non-poor households are the conditions of their housing, such as the size of floor area, type of wall, roof, and access to clean water and sanitation facilities. These house characteristics have been used as part of yearly household survey of National Socioeconomic Survey, which is conducted by Statistics Indonesia. Having a proper house and sanitary for the household also becomes one of the achievement indicators of the Millennium Development Goals in Indonesia.¹⁴ Therefore, it is expected that the welfare of recipient's household is getting higher by having proper house and sanitary.

The next variable is total income of entire family members. The variable of total income is different from income index, which is treated as the component of HDI. The total income is obtained by asking directly on how much the income of all of the member of household, while income index is estimated through the household expenditure side which are then adjusted to the purchasing power. By having more income, the expenditure of household is expected to increase and the HDI will eventually rise.

The last variable is DummyZ. This is the dummy variable, which equals to 1 if the household receives zakat and 0 if the household gets non-zakat fund.

IV. Findings

4.1 Respondents

There are 133 recipients of productive-based zakat, or 585 family members, who participate in the survey in the first year. 90 of the recipients who participate in the first period are then interviewed one more time in the second period. 43 recipients and their household in the first year cannot be interviewed for the second times because they cannot be contacted. Their home addresses and phone number have changed, so it is impossible to trace them.

The non-zakat clients or microenterprises who do not receive any zakat from zakat institution is planned to be used as the control group. The source of fund is not from zakat but other sources of fund that aim to get profit through other scheme such as *murabaha*.

¹⁴ For the discussion of MDG achievement in Indonesia, see <http://www.undp.or.id/mdg/documents.asp>.

The result of estimated HDI from this control group is used to compare to those result under productive-based zakat scheme. There are 60 households or 243 family members that are considered control group and interviewed at the first year, while at the second year eight of recipients and their family cannot be interviewed.

Table 2

Numbers of Respondents

Year	Zakat Fund	Non Zakat Fund
1st Period	133 Recipients (585 Family Members)	60 Recipients (243 Family Members)
2nd Period	90 Recipients (395 Family Members)	52 Recipients (183 Family Members)

Source: Field Survey

4.2 Variable of Profiles

There are five variables used to describe the profile of respondents. These variables are considered might have significant influence to micro entrepreneurs' welfare. The variables chosen are size of zakat financing, total income of entire family members, number of family members, empowerment programs that are joined by household of *mustahiq*,¹⁵ and the basic facilities of house where the *mustahiqs* and their families stay in.

Table 3

Descriptive Statistics for Size of Financing

	Mean	St. Dev	Minimum	Maximum
Zakat	(\$215)	(\$630)	(\$64)	(\$955)
Non-Zakat	(\$319)	(\$71)	(\$273)	(\$545)

Source: Field Survey

Table 3 shows descriptive statistics for size of total financing provided by zakat institution to its recipient.¹⁶ The average size of zakat financing given to the *mustahiq* is Rp2,362,031 (USD 215). This amount is relatively low as compared to the range of financing that is provided by Islamic rural bank, Islamic bank, and even other microfinance institutions such as cooperative and *Bait al-Maal wa al-Tamwil*.¹⁷ However, there is a *mustahiq* who

¹⁵ Empowerment is the expansion of assets and capabilities of the poor to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives (Narayan, 2002: xviii)

¹⁶ The size of zakat financing given is in total amount. This means that the recipient of zakat might receive the financing not only in the first period but also in the second period. In the contract, the recipients must pay back the zakat financing monthly during a year period.

¹⁷ *Bait al-Maal wa al-Tamwil* in nature is micro banking institution. The financing given from this

receives zakat financing amounting to Rp10,500,000 (USD 955) from a zakat institution. This is the highest amount ever received. The minimum size of zakat financing given is very small, which is Rp. 700,000 (USD 64).

On the other side, the average size of non-zakat financing given to the recipients is Rp3,506,667 (USD 215), with the standard deviation of Rp784,300 (USD 71). The minimum amount, which is about Rp3,000,000 (USD 273) is higher than those who receive zakat financing. The contrast is on the maximum amount of non-zakat financing. The maximum amount of non-zakat financing is only Rp6,000,000 (USD 545), which is smaller than zakat financing.

Meanwhile, as shown in table 4, the average household income of *mustahiq* is Rp1,410,000 (USD128) per month in the first period; with the minimum and maximum household incomes are Rp600,000 (USD55), and Rp3,000,000 (USD272), respectively.¹⁸ In the second period the average income of household rises to Rp3,831,000 (USD348), while the maximum income increases significantly to Rp16,840,000 (USD1530). However the minimum income that household can receive keeps constant at Rp600,000 (USD55).

Table 4

Mean, Maximum, and Minimum for Total Income of Household

	1st Period			2nd Period		
Household	Mean	Min	Max	Mean	Min	Max
Mustahiq	(\$128)	(\$55)	(\$272)	(\$348)	(\$55)	(\$1,530)
Non-Zakat recipient	(\$136)	(\$85)	(\$290)	(\$360)	(\$163)	(\$909)

Source: Field Survey

If a comparison is made between household income of *mustahiq* and non-zakat recipient, it can be seen that in general non-zakat recipient is wealthier than *mustahiq* of zakat. Though there is household of *mustahiq* who can get income above the income of non-zakat recipient, the average and minimum household income of *mustahiq* is lower than those of non-zakat recipient. However, the income gap between *mustahiq* and non-zakat recipient is smaller at the second period, which indicates that there is welfare improvement of *mustahiq*'s household.

Table 5 displays the distribution of *mustahiq* based on the other three variables, microfinance institution is purposed commercially, so they get margin or revenue for the financing. Rulindo (2012) shows that the average financing of BMT in Indonesia is about Rp5,000,000 (USD 454)

¹⁸ As the recipients in fact have no fixed income, it is estimated from expenditure approach which is taken through the questionnaire.

i.e. empowerment program, size of household, and basic house facilities. Empowerment program is categorized into 2 categories: yes if the *mustahiq* joins the program; and no if the *mustahiq* does not. Household size of is divided into two groups — one with 4 and less than 4 family members; and those who has more than 4 family members. The last variable, basic house facilities, is also categorized into two groups: complete if the household has all the six components properly, namely type of floor, type of wall, type of roof, lighting facilities, access to water, and access to toilet; and not complete if the house have less than these six basic components.

Table 5

Distribution of Empowerment Program, House Facilities, and Size of Household

Variable		Zakat		Non-Zakat	
		No	%	No	%
Empowerment Program	Yes	53	40	0	0
	No	80	60	60	100
Basic House Facilities	Complete	21	16	23	43
	Not complet	112	84	37	57
Size of Householed	≤ 4 persons	74	56	22	40
	> 4 persons	59	44	38	60
Total		113 (100%)		60 (100%)	

Source: Field Survey

4.3 The Estimation Result

4.3.1 Estimation of HDI

Table 6 shows some of the descriptive statistics of the HDI estimation for *mustahiq*'s household. It can be clearly seen that the average of HDI for the household of *mustahiq* at the second period is higher than that of first period. It can be further verified that, the minimum and maximum of HDI is also higher at second period. Except for life expectancy index, the other two components of HDI, i.e. index of income and index of education also show higher values at the second period.

Table 6
Descriptive Statistics of HDI Estimation
(For Householed of *Mustahiq*)

	<i>HDI1</i>	<i>HDI2</i>	<i>EDU1</i>	<i>EDU2</i>	<i>LIFE1</i>	<i>LIFE2</i>	<i>INC1</i>	<i>INC2</i>
Mean	0.60	0.69	0.80	0.90	0.57	0.54	0.44	0.63
StDev	0.09	0.08	0.15	0.08	0.06	0.06	0.08	0.12
Min	0.26	0.36	0.13	0.43	0.34	0.30	0.28	0.34
Max	0.79	0.87	1	1	0.66	0.62	0.71	1

Source: Estimation Result

HDI1 and HDI2 is Human Development Index for 1st and 2nd Period, EDU is index of education, LIFE is index of life expectancy, and INC is Index of income

Meanwhile, if a comparison is made between the result of household of *mustahiq* and household of non-zakat recipients, it can be viewed that for the mean and minimum value , the household of *mustahiq* get less level of HDI than that of the household of non-zakat recipient. However, there are households of *mustahiq* that achieve higher maximum value of HDI than that of non-zakat recipient. In contrast, the improvement of HDI for household of *mustahiq* at the second period created most of the statistics indicators better than the household of non-zakat, though the HDI distribution of non-zakat household is closer to normal assumption as the deviation is smaller than those of *mustahiq*. The t-test at the next part will clarify further these findings.

Table 7
Statistics Description of HDI Estimation
(For Household of Non-zakat recipient)

	<i>HDINZ</i>	<i>EDUNZ</i>	<i>LIFENZ</i>	<i>INCNZ</i>
Mean	0.63 (.68)	0.85 (.9)	0.58 (.58)	0.46 (.56)
StDev	0.02 (.02)	0.05 (.04)	0.04 (.05)	0.06 (.09)
Min	0.52 (.54)	0.73 (.74)	0.47 (.47)	0.35 (.40)
Max	0.70 (.86)	0.96 1	0.64 0.68	0.63 0.90

Source: Estimation Result

EDUNZ is index of education, while LIFENZ is index of life expectancy, INCNZ is index of income, and HDINZ is human development index for Non-zakat recipients. Numbers in the bracket are for 2nd period.

4.2.2 The Comparison Result

Tabel 8 provides the summary result of Non-Parametric test for HDI between 1st period and 2nd period.¹⁹ By evaluating the probability value (Prob> z), it can be inferred that the underlying distribution between the HDI value at first and second period is statistically significant. The HDI at first period is also significantly lower than at the second period. Furthermore, the detail results can be evaluated through its components where the education index and income index are statistically higher at the second period, while it is not significant for index of life expectancy. As a result, it can be concluded that there is an improvement of HDI of *mustahiq*'s household at the second period.

Table 8

Non-Parametric Test for HDI between 1st and 2nd Period

	(Prob > z)	z
HDI	0.0000**	-8.2600
Index of Income	0.0000**	-8.2420
Index of Life expectancy	0.2729	1.0960
Index of Education	0.0000**	-8.2460

** the null hypothesis of no significant difference is rejected at $\alpha = 1\%$ (the negative value of z indicates the second value (period 2) is positively higher than the first value (period 1))

Meanwhile, table 9 gives the non-parametric test result for comparison between HDI of *mustahiq*'s household and HDI of non-zakat recipients. At the first period the result suggests that the different between the underlying distribution of the HDI of *mustahiq* and the HDI of non-zakat recipient is not statistically significant. Except for index of income, no difference between the life expectancy index and education index between these two groups. It shows that income index of the household of non-zakat recipients is significantly higher than those obtained by *mustahiq*.

Table 9

Non-Parametric Test for HDI between *Mustahiq* and Non-zakat recipient

	NonZakat1 vs Zakat1		NonZakat2 vs Zakat2	
	(Prob > z)	z	(Prob > z)	z
HDI	0.2089	1.257	0.0000**	-4.6130
Index of Income	0.0747*	1.782	0.0000**	-6.523
Index of Life expectancy	0.339	0.339	0.0040**	2.8750
Index of Knowledge	0.2437	1.166	0.0000**	-4.7650

Source: Estimation Result

the null hypothesis of no significant difference is rejected at $\alpha = 1\%$ **, and $\alpha = 10\%$ *

the negative value of z indicates the second value (Zakat) is positively higher than the first value (Non-Zakat)

¹⁹ Non-parametric is performed instead of t-test method since all distribution of the HDI and its components values for *mustahiq* are not satisfying normality assumption.

At the second period, however, a meaningful different condition occurs. While at the first period the income index of *mustahiq* is significantly lower than that of non-zakat recipients, at the second period the situation is completely different. The income index of *mustahiq* is statistically higher than the income index of non-zakat recipients. The education index is also show similar result as income index, while life expectancy index gives contrasting outcome. In general, the HDI of *mustahiq*'s household at the second period is statistically higher than those of household of non-zakat recipients.

4.3 Discussion of findings

Describing the comparison of HDI each component will commence the discussion. First component is index of education. Index of education contributes very positively in the formation of the zakat's recipient and their families' HDI. It appears that the majority of recipients of zakat and their families have considerable fair education index at both periods. In fact this is consistent with the result of raw data where 99% of household of *mustahiq* are literate and the majority of them have high school education or take an informal education such as training and community-based program that is not only given by the zakat institution but is also provided by the government.

Second component is index of life expectancy. In contrast to the result in the education index, none of household *mustahiq* has above high-level life expectancy index category, i.e. above 0.80.²⁰ In other words, the entire recipient of productive- based zakat and their families are categorized at or below middle level. This shows the health condition of zakat recipients and their families should receive a larger share of attention from the zakat institution as well as the policy makers. Some components of composite health indicator, such as ability to access doctors, to access to health providers, and ability to get medicines, are in fact getting worse at the second period.

The highly cost of having access to the health facilities becomes the main reason behind those situations. The Global Medical Trends 2014 showed the increased healthcare and hospital costs was much greater than the increase in income of the people of Indonesia.²¹ As the result, some households have to treat themselves by buying only the-counter medicines when they are sick or even let the disease without treatment because they assume it does not interfere with their activities, with disastrous consequences later. Consequently, the complement programs including the provision of facilities and access to free health services should become a priority, in addition to direct health consultation and other empowerment

20 UNDP categorizes HDI into four levels: Low (0.00-0.49), Middle (0.50-0.79), High (0.80-0.89), and Very High (0.90-1.00).

21 Based on Global Medical Trends Survey Reports of Towers Watson in 2014, the rate of healthcare and hospital cost in Indonesia increased by 12.5% in 2012, and 13.5% in 2013. The cost is the 2nd highest in the Region of Asia Pacific.

programs for zakat recipients and their families.

A similar situation is also occurred to the third component, index of income. The majority of recipients of productive-based zakat and their families have only a low-level or middle-level index of income. However, the distribution of income index has considerably changed at the second period. Since the index of income is fundamentally representing achievement of all the basic needs, the significant improvement of income index indicator shows that the household is able to fulfill the basic needs including food and non-food components. At the 2nd period indeed the majority of *mustahiq* have succeeded their entrepreneurship further through having more income. However many of the other family members also get or create new jobs by joining the empowerment program provided by zakat institution, thereby contributing in forming more income to their household.

For instance, a community of one of the locations specializes in cooking and producing daily foods. The zakat institution then gives financing to the households to buy all the equipment and facilities for the cooking and provides an instructor to train the participants to become skillful in this field. Because the training program is open to the public, participants in practice are not only the recipients of zakat but other family members who also join the program. Thus, separately, other family members also sell food from the acquired expertise.

Meanwhile, it has also been presented that there is no significant difference of HDI achievement between the household of *mustahiq* and the household of non-zakat recipient, particularly at the first period. All the components, except for index of income, show statistically that the welfare level of these two groups is not different. The similar criteria for recipients to get both zakat and non-zakat funding become the reason of the finding. This means that all the clients, zakat and non-zakat, have analogous characteristics when receiving the financing. However, household of non-zakat has a better background in terms of economic measures causing a proper ability to buy basic needs. Thus index of income is higher than that of the household of *mustahiq*.

The comparison between the household of *mustahiq* and household of non-zakat recipient shows contrast result at the second period. The households of *mustahiq* get the income index and education index higher than the household of non-zakat. There are two possible reasons behind this result. First is because some of the *mustahiq* joined the empowerment program, while none of non-zakat recipient involved to the program. As explained before, empowerment program not only give additional ability to get succeed in doing business but also transfers some knowledge to the participants. The second reason is because there is no margin or interest on zakat fund. Even for most cases, the loan payment from the *mustahiq* is treated as saving which can be withdrawn when it is fully paid.

However there is interesting result regarding the life expectancy index. The life expectancy index of household of *mustahiq* becomes considerably worse than the household

of non-zakat, while the other two indexes of household of *mustahiq* show higher result. As explained above, the high cost of health facilities could become the reason behind this fact, thereby making the household of poor people prefers securing first their basic need consumptions to improving their health need. This is in line to the first priority in the Millennium Development Goals, which is to eradicate poverty and hunger.²² Insecurity of basic needs, particularly food, does not only threaten the quality of life of individuals but also has negative social and economic impacts.

5. Conclusion

This study has shown the method and result of estimated HDI at household level, which are rarely employed. Such a method shows that HDI can be disaggregated into household level, which then can further be utilized to evaluate welfare across household level of *mustahiq*. This method, absolutely, can be expanded so that it is not restricted to only *mustahiqs* as the object of measurement.

By using two periods of observation, it is found that the level of human development index of household who receives productive-based zakat is significantly higher than the first period. The underlying distribution of household HDI also improves at the second period. Moreover, by evaluating the detail results of the HDI components, the education index and income index are found statistically higher at the second period, while it is not significant for index of life expectancy. The life expectancy index of household of *mustahiq* is also considerably worse than the household who receives non-zakat financing.

The household of poor people seems securing first their basic consumption needs, particularly food and education to improving their health due to high cost of health facilities. Insecurity of basic needs, particularly food, does not only threaten the quality of life of individuals but also has negative social and economic impacts. However, since in general the overall index of HDI shows improved value, it can still be inferred that indeed there is an improvement of HDI of *mustahiq's* household at the second period.

There are some possible reasons why receiving productive based zakat financing is able to improve clients' welfare status, which is indicated by better HDI. As the clients receive financing from zakat institution, the improvement towards welfare status might occur due to investment in productive capital. Besides, while having micro financing may induce growth in income as well as basic need fulfillment, proper training and empowerment program could also become significant factor to strengthen households' awareness in having well education.

Furthermore, there are also some other plausible explanations behind these findings. At the initial period, financing received by the *mustahiq* provides opportunity for them to expand their business, undertake new activities and products, as well as improve the ownership of

22 For papers and discussions on MDG, see www.undp/mdg.

productive assets. At the second period, it may enhance the household's income and savings as well as strengthen households' ability to fulfill the basic consumption needs, while health expenditure remains the second priority. Thus, this indicates that, other than zakat, income plays significant role to the development of household welfare.

Apparently, the households who succeed in gaining higher HDI after they receive the financial aid from the zakat institutions are those who already have higher income. Monetary benefit seems to become the most important factor affecting the welfare level of household as having more income means having more opportunity to satisfy the basic consumption and all other household needs.

However, there is no significant difference of HDI achievement between the household of *mustahiq* and the household of non-zakat recipient, particularly at the first period. All the components, except for index of income, show statistically that the welfare level of these two groups is not different. The similar criteria for recipients to get both zakat and non-zakat funding become the reason of the finding. This means that all the clients, zakat and non-zakat, have analogous characteristics when receiving the financing. However, household of non-zakat has a better background in terms of economic measures causing a proper ability to buy basic needs. Thus index of income is higher than that of the household of *mustahiq*.

Therefore, it can be concluded that zakat, particularly productive-based zakat, can play important role to improve the welfare of poor household. Although the similar result could also be achieved by using non-zakat fund, giving zakat financing would be more beneficial to the *mustahiqs* since they do not have to pay back the financing.

Indeed, it is required significant amount of zakat to achieve this positive result. Since there is still a huge gap between the realization and the potential of zakat revenues by the Zakat institutions in Indonesia, the source of the amount could be taken by keeping increasing the received zakat from the *muzakki*. It needs not only effort from the zakat institutions but also from the government to provide the favorable regulations and environment. The public awareness is also needed to pay their zakat through zakat institutions to make the financing well managed to be distributed to the *mustahiq*.

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